

Official Stamp of Attendance Goes Here

Student Notes
Science on Saturday
Lawrence Livermore National Laboratory
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***Repairing DNA: Our Best
Defense Against Cancer***

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Goal: To understand the methods used at LLNL to assess the molecular nature of DNA and its role in Cancer.

You will be able to answer the following questions:

What is Cancer?

What is metastasis?

What is DNA and it's components?

What are genes? What do they make?

What are mutations?

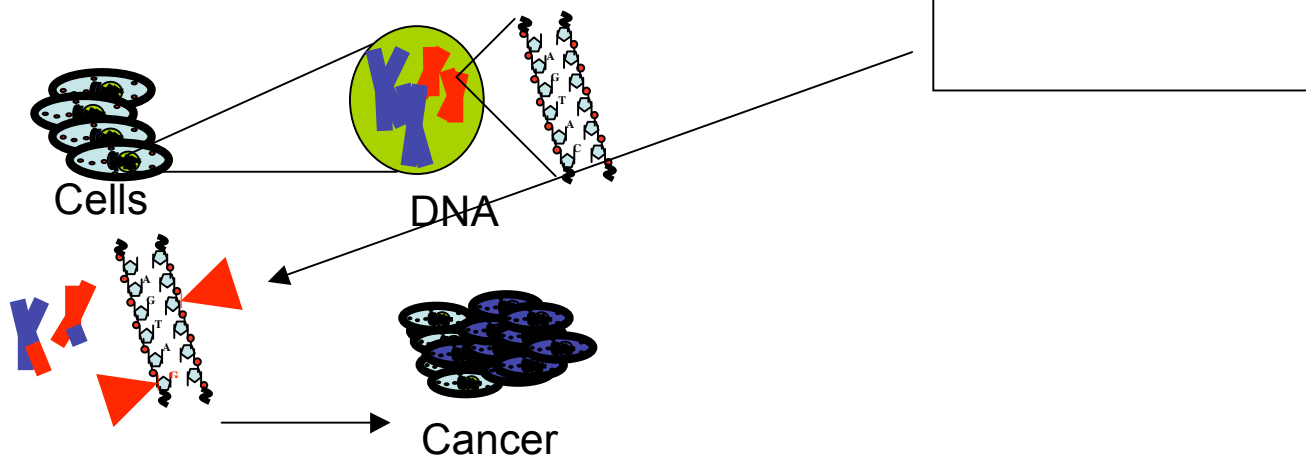
What could cause mutations?

What is the relationship between tumor suppressors and onogenes?

How does DNA repair relate to cancer?

Add details to your *Student Notes* as you follow the talk.

Cells to Cancer:



Cell Parts:

What are the parts of a cell?

What do the following tissues do?

Muscle:

Lung:

Nerve:

Skin:

What do proteins do for a cell?

What are the parts of the DNA molecule?

The subunit of DNA is called: _____

A binds to _____

C binds to _____

T binds to _____

G binds to _____

How many chromosomes do human cells have? _____

What is the Chromosome that determines if you are male? _____

What is a gene?

What do genes give the cell the ability to do?

What are two types of mutations?

1.

2.

What might happen if you have a change in a protein?

What are two general causes of mutations?

1.

2.

What might happen if a polymerase makes a mistake?

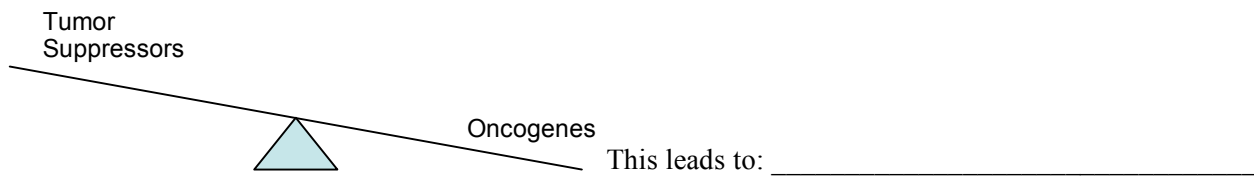
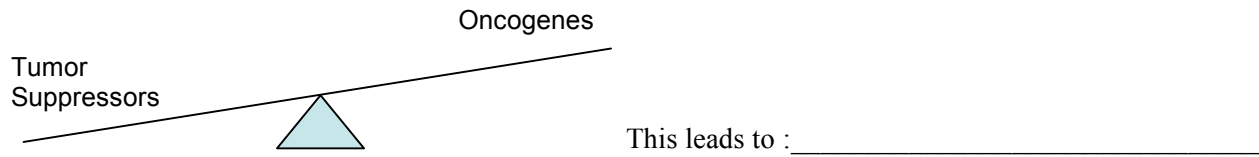
DNA repair is performed by groups of _____.

Mismatch repair corrects for _____ in the sequence of DNA.

Excision repair works by _____ and _____ damaged stretches of DNA.

What do tumor suppressor genes tell the cell?

What do Oncogenes tell the cell to do?



Define the following
Cancer:

Carcinos:

Oncos:

-ology:

How does UV light cause cancer?

What is the most common cancer in the U.S.?

What percentage of all cancer deaths are caused by tobacco?

What percentage of cancer deaths are related to diet and exercise?

What can you do to prevent cancer?